AMENDMENTS TO THE DRAWINGS:

Replacement drawing sheets are attached in the Appendix.

REMARKS

A substitute specification is submitted herewith. The substitute specification is believed to contain no new matter.

This responds to the first office action mailed February 02, 2006 in connection with the above identified patent application. Claims 15 to 25 were pending in the application. Claims 15 to 25 have been cancelled. New claims 26 to 35 have been added and are pending. Reconsideration and reexamination of the Application is respectfully requested.

**DRAWINGS**

New correct drawings in compliance with 37 CFR 1.121 (d) were required because the drawings did not comply with the requirements se forth in 37 CFR 1.84 (e.g. some of the reference letters were not clear to the examiner).

Applicant respectfully points out that, according to the requirements of CFR 1.84, a correction of the drawings has been made as stated in CFR 1.85.

In particular, in order to overcome the objections raised in the office action, new corrected drawings are submitted in compliance with CFR 1.84. The correction of the drawings consists of making more clear and distinguishable every reference letter. Moreover, every reference letter has been moved out of the respective figure with corresponding connection lines.

**SPECIFICATION**

The specification were objected to as being written in a confusing and unclear manner.

The disclosure were objected to for the informalities about the reference letter "D" used both for the "stump" and for "funnel".

As suggested in the office action, applicant has reviewed the specification for making the necessary corrections.

In particular, as set forth in 37 CFR 1.125 the specification has been substituted with another one, clear and understandable.

No new matter has been added during the substitution of the specifications.

Indeed, as required from 37 CFR 1.125, a copy of the old specification "marked-up copy", where the text of the deleted matter is shown by strikethrough, and the text of the added matter is shown by underlining the added text, is submitted, as long as a "clean copy" or "replacement sheets", to assist the examiner to check the such substitution.

**NEW MATTER**

The amendments to the drawings, specification and claims do not add new subject matter. Indeed, such amendments are clearly supported by the original text. In particular, the corrections

made on the drawings have been made only on the reference letters which have been enlarged accordingly. The specification has been substituted only for correcting the English grammar and lexical. Applicant kindly asks to control the matter of the old specification and the new specification, using the "marked-up copy" and the "clean copy", to confirm that the original matter is not changed.

Also the matter of the claims has been rewritten for better arranging the English grammar and the object of the invention without adding new matter not considered in the original text.

**Claim Objections**

Claims 16 and 21 were objected to because of the term "piece-mono-lithe" was unclear and claims 15-25 were objected to for numerous grammatical errors.

The whole set of claims has been rewritten paying attention to refer to a "single block" rather than the term "piece-mono-lithe" and to sue a grammatically correct English.

**Claim Rejection – 35 U.S.C. 112**

Claims 15-25 were rejected to under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention.
In order to overcome such a rejection, the whole set of claims has been rewritten clearly referring to a dental implant, clearly

stating the material used for the pin and the shell, largely avoiding the use of the term "it", stating what "is cemented with a photo polimerizable or a self-polimerizable compound" and supporting every term.

**Claim Rejection - 35 U.S.C. 112**

Claim 32 has been amended to overcome such informality. In particular, claim 32 has been amended to depend on claim 29 so that the limitation "said light source" in line of the claim finds sufficient antecedent basis, as required in the Detailed Action.

**Claim Rejections - 35 USC § 102**

Claims 1-18, 25-28, 39-40 were rejected under 35 U.S.C. 102 (e) as being anticipated by Lin (US Pub. No. 2004/0076217).

Applicant respectfully points out that **Lin (US Pub. No. 2004/0076217)** was filed on **October 10, 2002** while the **Application** was filed on **May 19, 2000**. Application is a forerunner document of Lin (US Pub. No. 2004/0076217) by constituting the prior art of the latter.

Therefore, Lin (US Pub. No. 2004/0076217) cannot be used like an antecedent document and cannot be used for invalidating the Application during its examination.

**Tomioka et al. (US Pub. No. 2002/0186746)**, like Lin (US Pub. No. 2004/0076217), was filed on **May 30, 2002 with a Foreign Application Priority data corresponding to June 01, 2001**, while the **Application** was filed on **May 19, 2000**. Tomioka et al. (US Pub. No. 2002/0186746) is therefore, latter than the Application and cannot be used as Application's prior art.

Claims 11, 29-38 were rejected under 35 U.S.C. (b) as being anticipated by Pompei (US 6,292,685). In particular, in the first Office Action, it is pointed out that Pompei discloses a device comprising a main holding body defining one grip region for a user and detecting means (20) for an infrared radiation emitted by a body the temperature of which is wished to be known. The detecting means (20) are operatively associated with the main holding body and has a sensor member for infrared radiation detection and a wave guide (68) having an inner surface with an inner coating/lining giving a mirror feature defining a passage for bringing into communication first and second openings opposite each other. Pompei also discloses the outer body (64) made of a metal material, i.e., aluminum. Pompei discloses the main body further comprising a light source, i.e., LED (22), emitting light in a direction that does not affects the sensor member and also gives the option of additional LED on different sides of the body. Pompei discloses a processing unit (80) associated with the sensor

and control means/control circuit (82) operatively associated with the processing unit.

It is to be noted that the wave guide (68), disclosed within Pompei (US 6,292,685), is conical (*column 4, line 39*), i.e., comprising an inner surface converging, with constant convergence, from the opening, facing to the outside (*first opening*), to the opposite opening (*second opening*) (*figure 2C*).

The waveguide of Pompei (US 6,292,685) could also provide an inner surface having two lengths, one diverging with respect to the other (*figures 2A and 2B*).

Pompei (US 6,292,685) does not disclose and show any wave guide whose convergent portion comprises at least two axially consecutive lengths in which the length closest to the inner opening has a greater convergence than the other length.

Therefore, the Application, according to original claim 11 as well as original claim 1, was already different with respect to what is disclosed in Pompei (US 6,292,685). Indeed, original claim 11 referred to an infrared thermometer comprising: a main holding body (2); detecting means (6) and a waveguide (8) with an inner surface (10) presenting one portion converging in the direction of the inner opening (*second opening*). Such converging portion comprising at least two lengths consecutive. **The length closest the second opening having a greater convergence than the others.**

Thus, Application according to original claims 1 and 11 was already novel over Pompei (US 6,292,685).

Gerlitz (US 6,435,711) and Gerlitz (US Pub. No. 2003/0016728) disclose infrared thermometers different with respect to what was originally claimed. In particular, such documents disclose and show an infrared thermometer whose waveguide (75) diverges from the external opening (70) (*first opening*) to the inner opening (*second opening*) by teaching a solution completely opposite to the one originally claimed.

Even if the hot junction (65) or the front part (91) of the detector head (50) were considered as a converging waveguide they only could have a constant convergence or more than two lengths each presenting an inverted convergence with respect to the preceding and/or following length.

Therefore, the Application as originally claimed was already novel over such documents.

Applicant respectfully draws the Examiner attention to the fact that original claims 1 and 11 were and are new over all prior art documents used and cited in the Office Action.

However, Applicant submits the above amendments to better distinguish the Application with respect to two documents (Tsao et al. US 5,820,264 and Fraden US 4,854,730) cited in the European

Search report and pointed out in the Information Disclosure Statement.

The first document, Tsao et al (US 5,820,264) refers to a tympanic thermometer arrangement having a tubular waveguide (20) whose inner surface converges in correspondence of the opening faced to the sensor element (*second opening*) according to consecutive lengths. The length closest to such opening presents a convergence greater than the others by defining a parabolic profile.

Likely, Fraden US 4,854,730 discloses a radiation thermometer having a waveguide (3) whose inner surface comprises lengths having a convergence greater and greater on moving from the window (9) or first opening to the control network (45).

Amended claim 1 refers now to a waveguide for an infrared thermometer comprising a tubular body having an inner surface defining a communicating passage between a first and a second opening of the tubular body opposite each other. The inner surface has at least one portion converging in the direction of the second opening. The convergent portion comprises at least two axially consecutive lengths in which the length closer to the second opening has a greater convergence than the other length. The convergent portion of the inner surface has a convergence progressively and continuously increasing from the first opening towards the second opening. The second opening is interposed

between the first opening and one sensor member of infrared-radiation intensity. The sensor-member is disposed outside the wave-guide.

In accordance with amended claim 1, amended claim 11 refers to an infrared thermometer comprising a main holding body and detecting means operatively associated with the main holding body. The detecting means has one sensor member of infrared-radiation intensity and at least one waveguide. The waveguide has a first end, turned towards the body the temperature of which is wished to be known, and a second end turned towards said sensor member. The second opening is interposed between the first opening and the sensor member. The waveguide has an inner surface defining a communicating passage between the first and the second opening opposite each other. The inner surface has at least one portion converging in the direction of the second opening and the convergent portion comprises at least two lengths that are axially consecutive to each other. The length closest to the second opening has a greater convergence than the other length. The convergent portion of the inner surface has also a convergence progressively and continuously increasing from the first opening towards the second opening.

Tsao et al (US 5,820,264) does not show a waveguide whose the inner surface's convergent portion presents a convergence progressively and continuously increasing on moving from the first

to the second opening. By the contrary, Tsao et al (US 5,820,264) shows an inner surface which, on moving from one opening to the other, presents a divergence portion and, a convergence portion (figures 5A and 5B) by defining a tube which is large in the middle and thin at the ends, in correspondence of the openings. Alternatively, Tsao et al (US 5,820,264) shows a long rectilinear length which ends with a portion more and more converging in correspondence of the second opening (figures 6A, 6B and 7).

Also Fraden (US 4,854,730) fails to show the combination of features claimed in amended claims 1 and 11. Indeed, Fraden (US 4,854,730) does not disclose a radiation thermometer provided with an infrared sensor member disposed outside the waveguide. Fraden (US 4,854,730) only discloses a sensor (1) which does not absorb infrared radiation but emits it toward the target. Moreover, according to all of the embodiments shown in Fraden (US 4,854,730), the sensor (1) is positioned inside the waveguide (3) by teaching the opposite with respect to what is claimed in amended claims 1 and 11, i.e., to position the sensor (1) outside the waveguide (3).

It is also to be noted that the waveguide (3) is provided with only one opening (*first opening*) for the passage of the radiation. Other thin openings (8), opposite to the first opening, are provided to allow the electricity connection between the sensor and a control network (45) as well as the structural

support of the sensor itself in the parabola focus. If the electricity connection and/or the structural support were not necessary also the thin openings (8) would not be necessary especially because such openings (8) and the wires hamper the good reflection of the radiations emitted towards the parabola's vertex and the parabolic cap defined between the vertex and the sensor. Indeed, Fraden (US 4,854,730) states that "*The supporting the connecting wires, 2, must be very thin and opening, 8, where wires, 2, enter the support, 10, must be small to minimize heat loss*" (*column 4, lines 29-31*).

None of the other documents cited and used, according to the Examination of the present Application shows the features claimed in amended claims 1 and 11. In fact, being the original Application already new with respect to Pompei (US 6,292,685), Gerlitz (US 6,435,711) and Gerlitz (US Pub. No. 2003/0016728) they are also new over such documents also after the present amendments.

In particular, Pompei (US 6,292,685) does not show a waveguide whose inner surface presents convergent portion converging progressively and continuously increasing from the first opening towards the second opening but it only shows an conical inner surface which extends without any converging variation. In other words, Pompei (US 6,292,685) shows an inner

surface converging constantly towards the second opening so that, in a longitudinal cross-section, the inner surface is defined by two rectilinear converging lines and not by two progressively curved lines.

Also Gerlitz (US 6,435,711) and Gerlitz (US Pub. No. 2003/0016728) does not show a waveguide whose inner surface has a convergent portion converging progressively and continuously increasing from the first opening towards the second opening. Both the documents refer to a waveguide (75) constantly diverging toward the sensor member or a converging conical entry whose convergence is like the convergence of the waveguide shown in Pompei (US 6,292,685), i.e. constant and not progressively greater from one opening to the other.

Applicant respectfully points out that new independent claims 41 and 45 are also new with respect to any prior art document cited in the present examination.

Indeed, new claim 41 refers to an infrared thermometer comprising all features of original claim 11 added with the allowable features expressed within original claim 19, i.e., a radiation-absorbing element axially interposed between said waveguide and sensor member.

Instead, new claim 45 refers to an infrared thermometer comprising all features of original claim 11 with the inner

surface comprising more than two lengths axially following each other and having a respective constant convergence progressively more marked on passing from one length to the following one in a direction towards the second opening of the waveguide.

Applicant respectfully points out that claims 1, 11, 41 and 45 are novel over the known prior art.

Applicant's respectfully points out that the Application, according to amended claims 1 and 11, 41, and 46 is also inventive over the art of record because of each claim is based on a combination of features not obtainable by a combination of the prior art's teachings.

In particular, Applicant brings the Examiner attention on the most pertinent prior art's documents, i.e., Tsao et al (US 5,820,264) and Fraden (US 4,854,730).

Applicant respectfully points out that to establish a *prima facie* case of obviousness three basic criteria should be met.

First, there should be some suggestion or motivation, either in the references themselves or the knowledge generally available to one of ordinary skill in the art, to modify the reference teachings.

Both Tsao et al (US 5,820,264) and the Fraden (US 4,854,730) fails to do that. In fact, neither Tsao et al (US 5,820,264) nor Fraden (US 4,854,730) suggest to modify the solutions disclosed in any other reference to obtain the application's claimed invention.

Second, there should be a reasonable expectation of success.

None of the references cited in this examination procedure, both by the Examiner and by the Applicant, can be modified by taking one or more features of other references for obtaining the claimed solution by enduring at the same time that the obtained device works or works well.

Indeed, if Tsao et al (US 5,820,264) and the Fraden (US 4,854,730) were combined together to obtain a device with a waveguide like the waveguide disclosed in Fraden (US 4,854,730) provided with a sensor member like the one shown in Tsao et al (US 5,820,264), i.e., outside the waveguide, it would not work because the sensor member could never receive the radiations reflected by the waveguide. This problem would exists also if the thin openings (8) were compared to the second opening of the invention. In fact, in this situation the thin opening could only allows the passage of radiations extending parallel to the longitudinal axis and within a space corresponding the thin opening's sizes. By the contrary all of the other radiations would be directed towards the parabola focus without reaching the sensor member.

Temperature measure would be therefore not reliable or even not possible (the device does not work!).

Third and finally the prior art references should teach all the claims limitations by considering that, however, that the reasonable expectation of success should be found in the prior art and sot based on applicant's disclosure.

It is clear that at least of two of the three above criteria are not met with reference of amended claim 1, as well as, claims 11, 41 and 45.

Thus, it is sincerely believed that a skilled person in the art would not combine such documents to obtain the claimed solution.

Moreover, as said above, in reference to the novelty discussion, Tsao et al (US 5,820,264) teaches to provide a waveguide with a first portion rectilinear and a second portion having a convergence more and more greater on moving from the first portion to the second opening. Tsao et al (US 5,820,264) also teaches to position the sensor member outside the waveguide in correspondence of the second opening.

Fraden (US 4,854,730) teaches to provide a waveguide having only one opening for allowing that the radiations emitted by the sensor go out the waveguide. The sensor is thus positioned inside the waveguide in correspondence of the focus of this latter.
If the teachings of Tsao et al (US 5,820,264) were combined with the teachings of Fraden (US 4,85,730), it could only obtain a waveguide like the one disclosed in Tsao et al (US 5,820,264) containing an emitting sensor situated in correspondence of the focus of the converging portion, or, alternatively, a waveguide with only one opening and the sensor member positioned outside the waveguide.

It is also to be noted that if the thin openings (8) disclosed and shown in Fraden (US 4,820,730) were erroneously considered like openings for allowing the passage of the radiation, the combination of the teachings of Tsao et al (US 5,820,264) and the teachings of Fraden (US 4,854,730) could not be used to obtain the claimed solution because of a sensor member as the one shown in Tsao et al (US 5,820,264) positioned outside a waveguide like the same disclosed in Fraden (US 4,854,730) would present overall sizes greater than the thin openings (second opening) of the waveguide itself. The thin openings do not allow the passage of radiations like the big opposite opening. Moreover, the thin openings are completely obstructed by the wires (2) which extends trough the openings (8) from the control network (45) to the sensor member (1). Applicant respectfully points out that such hypothetical provision could not work because the radiations would not be directly guided towards the sensor member but toward the focus of the waveguide.

More in detail, according to the embodiment shown in figure 1 of Fraden (US 4,854,730), a sensor member, as the one shown in Tsao et al (US 5,820,264), could not work, both for the presence of the support (10) and the presence of the wires (2). If the support (10) extending from the waveguide (3) to the control network (45) was considered like a portion of the waveguide so that the thin opening was defined by a tube, the sensor member should be positioned axially with the tube and externally the

waveguide by directly receiving only the radiations parallel and closer the longitudinal axis. If the support (10) was considered like a portion different to the waveguide, the sensor member should be adapted to house inside the tube or this latter should be adapted to contain the sensor member by extremely limiting the radiation reception.

According to the embodiments shown in figures 2, 9, 10 and 12, the sensor member should be positioned axially aligned with one of the two thin openings with several problems about the reception.

According to the embodiment shown in figure 11, the sensor member, positioned outside the wave guide would present the same problems already explained above.

Finally it is to be noted that Fraden (US 4854730) is the only prior art showing a waveguide with progressively converging portions, anyway such a waveguide may work exclusively with a sensor positioned in the parabola focus and therefore a combination of such prior art with any of the other references can not met at least the second criteria mentioned above (reasonable expectation of success) since the sensor is to be placed outside the openings and can not be reached by radiations (the device can't work!).

Please note that also the first criteria is not even met (non one of the prior art teaches or suggest to combine a thermometer

having a receiving sensor with Fraden showing an emitting sensor ad therefore working in a completely different way).

Finally please note that non prior art shows the use of at least 3 rectilinear lengths axially following each other and having a grater convergence than the previous one.
Therefore also claim 45 should be considered patentable.

It is sincerely believed that a skilled person may not obtain the claimed solution by only combining the teachings of such documents without running an inventive step.

It is also to be noted that, none of the other prior art documents cited and used during the examination procedure both alone and in combination with one or more of the prior art's documents is able to suggest a provision like the one claimed.
Therefore the Application, according to claims 1, 11, 41 and 45 and the dependent claims is inventive over the art of record.

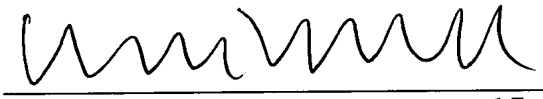
## Conclusion

All matters having been addressed above and in view of the pending claims and remarks, applicant respectfully requests the entry of this amendment, the Examiner's reconsideration of the application, and the timely allowance of the pending claims.
Applicants' counsel remains ready to assist the Examiner in any way to facilitate and expedite the prosecution of this application.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON



Robert J. Patch, Reg. No. 17,355
745 South 23rd Street
Arlington, VA 22202
Telephone (703) 521-2297
Telefax (703) 685-0573
(703) 979-4709

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**APPENDIX**:

The Appendix includes the following item(s):

☐ - a terminal disclaimer

☐ - a 37 CFR 1.132 Declaration

☐ - a new or amended Abstract of the Disclosure

☒ - Replacement Sheets for the drawing figures

☒ - a Substitute Specification and a marked-up copy of the originally-filed specification

☐ - a verified English translation of foreign priority document